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EXAMINER	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/593,360
Filing Date: June 14, 2000
Appellant(s): CRABTREE ET AL.

Sue Shaper
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 15, 2004. This Answer does not consider nor is it in response to the "Back Up" brief filed, June 15, 2004, with the appeal brief.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 12-18, 20 and 39-43 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

4,224,956	Klein	9-1980

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim 16 stands rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not appear to teach a "fixed pressure drop." Even if the pilot valve produces a fixed pressure drop which is dependent on the fluid flow, no "range of preselected fixed pressure drops" is disclosed in the specification. If the "range of preselected fixed pressure drops" can be any value, then the recitation "fixed pressure drop" is not "fixed". If the recitation "fixed" is a preset value, the specification does not disclose a preset value.

Claims 12-18, 39-41 and 43 stand rejected under 35 U.S.C. 102(b) as being anticipated by Klein (4,224,956).

With respect to claims 12-15, Klein discloses a method for proportioning fire fighting foaming concentrate into a variably flowing fire fighting fluid passing through a conduit comprising: adjusting a fire fighting fluid orifice 18; varying a fire fighting foam concentrate orifice 54; supplying fire fighting foam concentrate (column 1, lines 16-28).

With respect to claims 16-17, Klein further discloses a pilot valve 36 and spring 38.

With respect to claims 13 and 18, Klein further discloses a baffle/piston 36.

With respect to claims 39-41 and 43, Klein discloses a method for proportioning foam concentrate comprising: placing pressurized fire fighting foam concentrate in communication with pressurized fire fighting fluid flowing through a conduit (through opening 54); arranging a pilot valve 36. Measuring pressure drop is accomplished since the degree to which opening 54 is opened depends on the pressure drop across element 36.

Claims 20 and 42 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Klein (4,224,956).

Klein discloses the limitations of the claimed invention with the exception of the nozzle and the flow rate range.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the valve of Klein as a terminal member (a nozzle) to spray the mixed fluid.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a flow rate of at least 500 gpm for optimization dependent of operating criteria, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

(11) Response to Argument

Appellant's classification/description of Stage I (when pin 62 is bottomed out in the downstream end of slot 60) and Stage II (the brief transitory period when piston 32 is moved from its closed to its open position, or vice-versa) is acknowledged.

Appellant argues that Stage II is so brief and transitory, and is so ignored by Klein, as to be legally insignificant. Applicant provides no evidence why any disclosure, no matter how brief the time of occurrence of the event, should be ignored. Piston 32 of Klein does move from its closed position to an open position and vise-versa. The adjustable proportioning valve of Klein is not a digital valve. There is a transition from the closed position to the open position, and vise-versa, no matter how brief the transition time. Appellant's claimed invention is not limited to extended transition times.

Appellant argues that "a fixed pressure drop" is taught in the specification on page 25, line 27, to page 27, line 24. Appellant also directs attention to original apparatus claims 21-23, 33-36 and original method claims 24-26. It should be noted that the application, as originally filed, contained claims 1-23. Claims 24-44 were add by the preliminary amendment filed on June 18, 2001. Appellant cannot rely on claims 24-44 for any teachings of a "fixed pressure drop" or a "range of preselected fixed pressure drops". The specification discloses pressures and pressure drops in the general sense. There is no teaching in the specification for a "**fixed** pressure drop" from a "range of **preselected** frixed pressure drop". (Bold added) Because claim 21 merely recites "pre-selected pressure drop", a new matter rejection was not made.

Appellant argues that one of ordinary skill in the art would know how to determined the range of preselected fixed pressure drops. Appellant argues that one of

ordinary skill in the art would know to use the appropriate spring in the pilot valve to set the pressure drop. Such would seem to evidence that no specific range of preselectable fixed pressure drops is taught because one of ordinary skill in the art can use a spring that offers almost no resistance such that the pilot valve opens immediately no matter what the pressure of the working fluid or very stiff spring such that the pilot valve never opens no matter what the pressure of the working fluid. An open ended range cannot be reasonable be considered to teach "among a range of reselectable fixed pressure drops".

Regarding claim 12, appellant argues that Klein does not teach "adjusting a fire fighting fluid orifice in a fire fighting fluid conduit to maintain a predetermined pressure drop across the orifice as fire fighting fluid flow rate through the conduit varies" nor "varying a fire fighting fluid orifice to maintain a preselected pressure drop in the conduit". Klein teaches varying/adjusting orifice 18 using piston 32 and spring 38. Spring 38 by definition has a spring constant.

Appellant argues that "a deluge" condition wherein flow hits the valve of Klein. Appellant argues the anticipation of turbulent flow. Appellant's argument is speculative. No such condition is disclosed by Klein. Rather one of ordinary skill in the art would understand that Klein discloses a condition wherein fluid is present in the valve and a pump pressure upstream or pump suction downstream of the valve provides the pressure differential across the valve (see Klein, column 5, lines 28-40).

Spring 38 like all springs functions according to the relationship $F = -kx$. Therefore, valve 32 opens distance **x** according to the force of the fluid applied against

piston head 36. As fluid pressure increases, from zero flow to steady state flow, the pressure against valve head increases causing valve head to be displaced from fully closed to an open condition. During the that period, no matter how brief, appellant's claimed limitation is met.

Regarding claim 39, appellant argues that Klein does not disclose "arranging a pilot valve sensitive to flow rate of the fire fighting fluid in the conduit". If "arranging a pilot valve sensitive to flow rate of the fire fighting fluid in the conduit" is not accomplished in the device of Klein, valve head 36 would not open. Rather, valve head 36 is arranged sensitive to flow rate by spring 38.

Regarding claim 20, appellant argues that "automatically adjusting a fire fighting nozzle to control discharge pressure" and/or "automatically varying a foam proportioning orifice to meter foam concentrate self-educted into the nozzle in accordance with fire fighting fluid flow rate through the nozzle." Klein disclose automatically adjusting a fire fighting valve 12 to control discharge pressure from outlet 20 and automatically varying a foam proportioning orifice 54 to meter foam concentrate from port 28 self-educted into the valve in accordance with fire fighting fluid flow rate through the valve 12. Orifice 54 is trapezoidal in shape and proportions the flow of foam concentrate. Klein's valve is not disclosed as a terminal element, i.e. a nozzle. It would have been obvious to one of ordinary skill in the art to eliminate the downstream piping and use the valve of Klein as a terminal element. It has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184. (See Klein, column

1, lines 20-22, "...where a fire retardant liquid such as 'Light Water' or protein foam is mixed in small proportion with water immediately prior to being sprayed or jetted into a fire.")

Appellant argues that Klein neither discloses a pressure drop around the obstruction nor teaches varying the obstruction by the pilot valve to maintain a fixed pressure drop. Klein teaches a pressure drop across piston head 36 by varying the obstruction (piston head 36) by the pilot valve 32. Note that only claim 39 recites a "pilot valve" and an "obstruction." In considering clam 39, the obstruction 36 and the remainder of valve 32 are read as separate elements.

Appellant argues that Klein does not teach proportioning a chemical into a variably flowing fluid. Klein teaches proportioning a chemical (Klein, column 1, lines 20-22, fire retardant liquid such as "Light Water" or protein foam) into a variably flowing fluid (fluid flowing into inlet 18). The chemical is automatically proportioned by the trapezoidal shape of orifice 54.

Appellant argues that Klein does not teach automatically adjusting to control discharge pressure or pressure drop. Klein teaches spring 38 to automatically adjust the discharge pressure or pressure drop.

Appellant focuses on what appellant describes as Stage I in the operation of Klein. The rejections are based solely on what appellant describes as Stage II in the operation of Klein. No matter how brief the time period for valve 32 of Klein to open, the orifice 18, piston head 36, spring 38, and trapezoid shaped orifice 54 function to

automatically control the pressure drop across piston head 36 and to automatically proportion the chemical through orifice 54 into the fluid flowing out of orifice 20.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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December 12, 2004

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